

## REMARKS

Claims 1-27, 30-31, 33-36, 38 and 58 were previously canceled. Claim 52 has been canceled. Claims 37, 39 and 44 have been amended. Claim 44 has been amended to recite "octyl phenol ethoxylate" in lieu of "Triton® X-100". Claims 28, 29, 32, 37, 39-57, and 59 are presently pending. No new matter has been added.

Favorable reconsideration and withdrawal are requested of the rejections of claims 37-39, 41-43, 45-47, 49, 51-53, 57 and 59 under 35 U.S.C. § 102(b) as being allegedly anticipated by Emerson *et al.*. The Office maintains that Emerson teaches the control of arachnids which encompass "mites".

To anticipate a claimed invention under 35 U.S.C. § 102, the single prior art reference must teach each and every element of the claimed invention. Dayco Products, Inc. v. Total Containment, Inc., 66 U.S.P.Q.2d 1801, 1809 (Fed. Cir. 2003). Even if Emerson teaches the control of arachnids, and arachnids encompass mites, Emerson does not teach each and every element of the claimed method, as exemplified in claim 37.

First, Emerson demonstrated the use of a specific compound, cinnamic aldehyde, which is not the compound used in the present invention, to treat specific mites. In contrast, the present invention does not use an aldehyde at all. The preferred compound of the present invention is an ester. Aldehydes and esters are completely different organic compounds. The functional groups of an aldehyde and an ester are very different. An aldehyde has a carbonyl group as the functional group, while ester has a carboalkoxy group as the functional group. Therefore, the chemistry of the aldehyde and the ester are different. For example, an aldehyde can only be formed from an ester by reaction of the ester with a species such as diisobutylaluminium hydride and, therefore, it is highly unlikely that this chemical reaction will occur in nature. Emerson teaches the use of only an

aldehyde in the treatment of mites. Absent any other teachings or suggestions, Emerson cannot be extrapolated to include the use of any other compounds, including an ester, for example, to control specific mites. Clearly, aldehydes and esters are entirely different chemical species that have distinct chemical properties. As such, the fact that an aldehyde had been found to be active against arachnids in Emerson would not lead a person of ordinary skill to consider the use of an entirely different ester compound for use in the control of specific mites.

Second, even assuming that one can extrapolate the use of an aldehyde to the use of an ester in the treatment of arachnids, it is well established that the teachings of a genus in the art does not anticipate the species. In Metrobolite Laboratories Inc. v. Laboratory Corp. of America Holdings, 71 U.S.P.Q.2d 1081 (Fed. Cir. 2004), the court held that the prior art reference, *Refsum*, did not anticipate the claimed invention under 35 U.S.C. § 102. The court stated:

Refsum does disclose that total homocysteine should be used to investigate ‘perturbations of homocysteine metabolism in humans during disease or pharmacological interventions that affect metabolism of one-carbon compounds.’ Refsum, however, does not specifically mention cobalamin or folate deficiencies....Rather than necessarily containing the correlation between homocysteine and cobalamin or folate deficiencies, Refsum simply invites further experimentation to find such associations....Refsum discloses no more than a broad genus of potential applications of its discoveries. *A prior art reference that discloses a genus still does not inherently disclose all species within that broad category.*

(Emphasis Added). 71 U.S.P.Q.2d at 1091.

Even assuming that cinnamic aldehyde and the ester are equivalent, which they are not, a method of controlling arachnids would not necessarily apply to mites. Granted, arachnids broadly encompass mites and ticks (8-legged organisms). However, there are over 30,000 species of mites. Not surprisingly, numerous different treatments are available to eradicate/control mites. Even though Emerson purports to treat ticks with cinnamic aldehyde, it is not clear whether cinnamic

aldehyde would be effective against all types of ticks, given that over 800 species of ticks exist. Therefore, it is not reasonable to extrapolate the treatment of arachnids, ticks, or other organisms in Emerson to the specific mites recited in the claimed invention. As the court in In re Matter of the Application of Horst Meyer, 202 U.S.P.Q. 175 (C.C.P.A.) makes clear, “[t]he genus, ‘alkaline chlorine or bromine solution,’ does not identically disclose or describe, within the meaning of § 102, the species alkali metal hypochlorite, *since the genus would include an untold number of species.*” (Emphasis Added).

Accordingly, Emerson does not teach each and every element of the claimed invention. Applicant respectfully requests reconsideration and withdrawal of this rejection under 35 U.S.C. § 102(b).

Claims 28, 29, and 32 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Emerson *et al.*

To establish a *prima facie* case of obviousness, there must be 1) a suggestion to combine or modify, 2) a reasonable expectation of success and 3) the references must suggest all of the claim limitations. MPEP § 2143. Emerson does not render the claimed invention obvious. Mites, ticks, and lice are different organisms and thus, are classified separately. See Exhibits 2, 3, and 4 in the previous response. Emerson merely teaches that cinnamic aldehyde can be used to treat certain arachnids. Nothing in Emerson suggests that an ester, such as *trans*-cinnamic acid ethyl ester, can be used to treat specific mites. At best, Emerson merely invites a person of ordinary skill in the art to perform further experimentation. However, obvious to try is not the standard. In addition, the skilled artisan would not have a reasonable expectation of success. First, he would have to recognize and modify cinnamic aldehyde to an ester or an ester to an aldehyde. As discussed above, the ester would have to react with diisobutylaluminum hydride, for example, to form the

aldehyde, which is highly unlikely to occur in nature. Alternatively, using hindsight, the skilled artisan would have to convert the ester in the claimed invention to an aldehyde. Hindsight, however, is prohibited under the patent laws. Even assuming that he would be motivated to convert the aldehyde to an ester, he would still encounter an undaunted task of testing the compound on a vast number of different species. As discussed above, there are over 800 species of ticks and over 30,000 species of mites. It is unlikely that a cinnamic aldehyde compound of Emerson would be active against all the species of mites.

Applicant submits that the claimed invention is not obvious in view of Emerson and respectfully requests reconsideration and withdrawal of this rejection under 35 U.S.C. § 103.

Claims 40, 44, 48, 50 have been objected to as being dependent upon a rejected base claim. Claims 40, 44, 48, and 50 depend from claim 37. For the reasons discussed above, Applicant submits that claim 37 is patentable over Emerson, and is in condition for allowance. Thus, the objected claims should also be allowable. Withdrawal of the objection, therefore, is respectfully requested.

The Office alleges that claims 51 and 52 are duplicates and should be corrected. Claim 52 is hereby canceled. Applicant respectfully requests reconsideration and withdrawal of this objection.

Claim 45 stands rejected under 35 U.S.C. § 112, second paragraph, for recitation of the trademark, Triton® X-100. Applicant believes the Office intended to reject claim 44, which recites Triton® X-100, and not claim 45. Claim 44 has been amended to recite the chemical composition of Triton® X-100, ethoxylated p-tert-octylphenol. Applicant submits herewith evidence that a person of ordinary skill in the art would recognize that Triton® X-100 is synonymous to ethoxylated p-tert-octylphenol. (Exhibit 5). The present application was filed on June 12, 2002,

claiming priority to WO 97/35476, which was filed on August 24, 1999. Exhibit 5 was published in 1999.

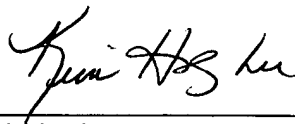
Applicant submits that claim 44 is clear and definite and respectfully requests reconsideration and withdrawal of this rejection under 35 U.S.C. § 112, second paragraph.

### CONCLUSION

All of the stated grounds of rejection and objection have been properly traversed, accommodated, or rendered moot. Applicant, therefore, respectfully requests that the Office reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. If the Office believes, for any reason, that personal communication will expedite prosecution of this application, he is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Response is respectfully requested.

Respectfully submitted,



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# Material Safety Data Sheet

## Triton X-100



ACC# 95513

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Triton X-100**Catalog Numbers:** AC215680000, AC215680010, AC215680050, AC215682500**Synonyms:** Polyethylene glycol mono[4-(1,1,3,3-tetramethylbutyl)phenyl]ether.**Company Identification:**

Acros Organics N.V.

One Reagent Lane

Fair Lawn, NJ 07410

**For information in North America, call:** 800-ACROS-01**For emergencies in the US, call CHEMTREC:** 800-424-9300

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
9002-93-1	Ethoxylated p-tert-octylphenol	100	unlisted

**Hazard Symbols:** XN**Risk Phrases:** 22 41

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. **Warning!** May cause eye and skin irritation. May cause respiratory and digestive tract irritation. The toxicological properties of this material have not been fully investigated. May cause allergic skin reaction. May be harmful if swallowed.

**Target Organs:** Eyes.**Potential Health Effects****Eye:** Causes severe eye irritation. Causes redness and pain. Risk of serious damage to eyes.**Skin:** May cause skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.**Ingestion:** May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May be harmful if swallowed.**Inhalation:** May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated.**Chronic:** Repeated exposure may cause sensitization dermatitis.

### Section 4 - First Aid Measures

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the

upper and lower eyelids. Get medical aid.

**Skin:** Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

**Ingestion:** Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid. Wash mouth out with water.

**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

**Notes to Physician:** Treat symptomatically and supportively.

**Antidote:** None reported.

## Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Runoff from fire control or dilution water may cause pollution.

**Extinguishing Media:** Water or foam may cause frothing. Use water spray, dry chemical, carbon dioxide, or chemical foam.

**Flash Point:** 274 deg C ( 525.20 deg F)

**Autoignition Temperature:** Not available.

**Explosion Limits, Lower:**Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 1; Flammability: 1; Instability: 0

## Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Avoid breathing dust, vapor, mist, or gas. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation.

**Storage:** Do not store in direct sunlight. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an

eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

#### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ethoxylated p-tert-octylphenol	none listed	none listed	none listed

**OSHA Vacated PELs:** Ethoxylated p-tert-octylphenol: No OSHA Vacated PELs are listed for this chemical.

#### Personal Protective Equipment

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

## Section 9 - Physical and Chemical Properties

**Physical State:** Liquid

**Appearance:** clear, colorless

**Odor:** Not available.

**pH:** Not available.

**Vapor Pressure:** < 1 mm Hg @ 20

**Vapor Density:** 22.31

**Evaporation Rate:** Not available.

**Viscosity:** 240 cP 25 deg C

**Boiling Point:** 270 deg C @ 760.00mm Hg

**Freezing/Melting Point:** 6 deg C

**Decomposition Temperature:** Not available.

**Solubility:** insoluble in kerosene, mineral spirits.

**Specific Gravity/Density:** 1.0590g/cm<sup>3</sup>

**Molecular Formula:** Not available.

**Molecular Weight:** 646.85

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures.

**Conditions to Avoid:** Light, exposure to air, exposure to moist air or water.

**Incompatibilities with Other Materials:** Strong oxidizing agents - strong reducing agents - high temperatures.

**Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide.

**Hazardous Polymerization:** Will not occur.

## Section 11 - Toxicological Information



**RTECS#:****CAS#** 9002-93-1: MD0907700; YM0616666; YM0683332**LD50/LC50:****CAS#** 9002-93-1:

Draize test, rabbit, eye: 10 uL/24H Moderate;

Draize test, rabbit, skin: 500 uL/24H Mild;

Oral, rat: LD50 = 1800 mg/kg;

Oral, rat: LD50 = 3800 mg/kg;

Oral, rat: LD50 = 1900 mg/kg;

**Carcinogenicity:****CAS#** 9002-93-1: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.**Epidemiology:** No information found.**Teratogenicity:** No information found.**Reproductive Effects:** No information found.**Neurotoxicity:** No information found.**Mutagenicity:** skn-hmn:2 mg/3D eye-rbt:1 mg Standard Draize testMut. DNA inhibition hmn HeLa cells:21 mg/LMut. hmn HeLa cells:14 mg/L**Other Studies:** COD:1.99 g oxygen/g thOD:2.13 g oxygen/gBOD-5:0 g oxygen/g

## Section 12 - Ecological Information

**Ecotoxicity:** No data available. Fish-toxicity: Bluegill TL(96H): Dynamic Bioassay: >10 mg/l Static Bioassay: 12 mg/l**Environmental:** No information found.**Physical:** No information found.**Other:** No information available.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.**RCRA U-Series:** None listed.

## Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
<b>Shipping Name:</b>	No information available.				No information available.
<b>Hazard Class:</b>					
<b>UN Number:</b>					
<b>Packing Group:</b>					

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

CAS# 9002-93-1 is listed on the TSCA inventory.

#### Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

#### Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

#### Section 12b

None of the chemicals are listed under TSCA Section 12b.

#### TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

#### SARA

#### CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

#### SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

#### SARA Codes

CAS # 9002-93-1: acute.

#### Section 313

No chemicals are reportable under Section 313.

#### Clean Air Act:

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

#### Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

#### OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

#### STATE

CAS# 9002-93-1 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California No Significant Risk Level: None of the chemicals in this product are listed.

### European/International Regulations

#### European Labeling in Accordance with EC Directives

#### Hazard Symbols:

XN

#### Risk Phrases:

R 22 Harmful if swallowed.

R 41 Risk of serious damage to eyes.

#### Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 39 Wear eye/face protection.

#### WGK (Water Danger/Protection)

CAS# 9002-93-1: 1

#### Canada - DSL/NDSL

CAS# 9002-93-1 is listed on Canada's DSL List.

**Canada - WHMIS**

This product has a WHMIS classification of D2B.

**Canadian Ingredient Disclosure List**

CAS# 9002-93-1 is listed on the Canadian Ingredient Disclosure List.

**Exposure Limits****Section 16 - Additional Information**

**MSDS Creation Date:** 2/04/1999

**Revision #3 Date:** 10/07/2003

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